

Hertz's realism deserves his own comment, from the conclusion to his introduction to his collected papers on *Electric Waves*:

It is not particularly satisfactory to see equations set forth as direct results of observation and experiment, where we used to get long mathematical deductions as apparent proofs of them. Nevertheless, I believe we cannot, without deceiving ourselves, extract much more from known facts than is asserted [in Hertz's papers]. If we wish to lend more colour to the theory, there is nothing to prevent us from supplementing all this and aiding our powers of imagination by concrete representations ... But scientific accuracy requires of us that we should in no wise confuse the simple and homely figure, as it is presented to us by nature, with the gay garment which we use to clothe it. Of our own free will we can make no change whatever in the form of the one, but the cut and colour of the other we can choose as we please. (EW 28)

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Max von Laue, in his moving tribute to Hertz, says that Boltzmann responded to the 1890 paper 'On the Fundamental Equations of Electromagnetics for Bodies at Rest', by saying with astonishment, quoting Goethe's *Faust*, Part I, "Was it a God, who traced this sign?". Helmholtz, grieving the loss of his beloved student after Hertz's death so young, wrote "In the old classical days, it would have been said that he has fallen victim to the envy of the gods". Hertz's last letter, to his parents, 8 December 1893, surely helps to transcend our melancholy:

If anything should really befall me, you are not to mourn; rather you must be proud a little and consider that I am among the especially elect destined to live for only a short while and yet to live enough. I did not desire or choose this fate, but since it has overtaken me, I must be content; and if the choice had been left to me, perhaps I should have chosen it myself.

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